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SANITARY

AND

PREVENTIVE MEASURES:

DISINFECTANTS AND HOW TO USE THEM,

OR

WHAT MAY BE DONE

BY THE PUBLIC TO

GUARD AGAINST CHOLERA,

AND

Other Diseases

BY THE SANITARY COMMITTEE OF THE BOARD OF HEALTH OF PHILADELPHIA, SEPTEMBER 1, 1892.

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Philadelphia Bd. of health
Sanitary Committee

SANITARY

AND

PREVENTIVE MEASURES, ETC.

The following sanitary and preventive measures, especially important at this season of the year, are published for the guidance of citizens in the management of their dwellings, and for personal application.

Although the city is free from epidemic disease, the threatened approach of cholera is a warning to be prepared for any emergency that may arise. Whatever labor or expense may be incurred in improving the condition of dwellings will not be lost should no epidemic occur; for the very means that are most efficient in affording protection against epidemic disease are those to be employed against the propagation of disease in general. While the health of the community depends in great degree upon a rigid observance by officials of all the laws of public hygiene, it is no less dependent upon the faithful application of the principles of hygiene upon the part of individuals. To accomplish the best results, the earnest co-operation of the people with the health authorities, in all matters pertaining to the health of the city is absolutely indispensable.

Thorough ventilation of dwellings is essential to the health of the occupants. Fresh air is a most important means of promoting and sustaining the healthy action of the body. Personal cleanliness, and cleanliness about dwellings and premises, should be most carefully observed. A source of danger to health is the decomposition of organic matter in and about houses. Cellars, areas, drains, cesspools, should be examined, to see that they contain nothing to poison the air. Privy wells should be kept free from garbage and refuse

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matter of all kinds, and, where they have been neglected, immediate attention should be directed to them. Damp cellars are injurious to health. The foul and humid air from them will permeate the house, in spite of every effort to prevent it. A remedy should at once be instituted. It is common habit to throw waste material, especially kitchen garbage, into the gutters and streets, where it decomposes and vitiates the atmosphere. This is an offense alike unjust to ourselves and to our neighbors. When the proper removal of these substances is neglected, complaint should at once be made to the Department of Public Works. Duty requires every citizen to be vigilant, and to bring to notice all such nuisances.

For the prevention of disease, a good nutritious diet and regular habits of life are indispensable; temperance in all things is to be observed; and avoidance of all excesses is strictly insisted upon. Constant vigilance is necessary to guard against the many causes which at this season of the year have a tendency to disturb the stomach and bowels, thereby depressing the nervous system and diminishing the power to resist disease. With a view of securing a thorough sanitary condition of the city, information of all nuisances, of whatever character, whether public or private, should be reported without delay to the Board of Health, that immediate action may be taken.

CLEANLINESS.

The essential preventive of disease is cleanliness. Keep your houses, cellars, yards, vaults, and sinks clean, wherever it can be done. Whitewash the walls of your houses, cellars, fences, outhouses, shops, factories, storehouses, and every other place about your premises where dampness exists, and where mould or mildew forms. It keeps the walls dry, sweet and clean, and prevents the accumulation of moisture, which promotes putrefaction, giving rise to living organisms which are thought by many to be a specific cause of disease.

Avoid all collection of coal ashes mixed with kitchen garbage, slops, stagnant water, and other semi-solid or liquid filth, anywhere about your premises.

"Putrefaction and the effluvia from effete organic matter, are among the most active and preventable of the *locating causes* of cholera and fevers. To prevent such evils, and destroy noxious exhalations, is the chief object of all the processes of cleansing and disinfecting."

"Water is the universal agent for cleansing. Clothes-washing, scrubbing, and flushing, will never be properly appreciated until the relation of these homely duties to the prevention of infection and disease is more generally understood."

"Sewers, house-drains, waste-pipes, and water-closets should be frequently *flushed* with water—let on the largest practical volume. Water-closets and house-drains should be *flushed* in this manner every day."

VENTILATION.

Your premises, particularly sleeping apartments and cellars, should be thoroughly ventilated. Ventilation is no less a purifier than water. It cleanses by oxidizing and drying. Keep your houses open, and your windows hoisted during the day in good weather that they may have the full benefit of sun-light and a free circulation of pure air. Avoid the possibility of exposure to sudden changes of weather at night. When the weather is cool or rainy, be sure to keep a fire in the house in order to prevent dampness; in sparsely settled neighborhoods, or in the suburbs of the city, have a fire in the house the entire season.

DISINFECTANTS.

These are equally important. They absorb impure exhalations, prevent decomposition, and destroy noxious gases, but in no instance should they be considered or employed as sub-

stitutes for a pure atmosphere, obtained by free ventilation. "These are simply aids in restoring and preserving healthful purity, and not substitutes for cleanliness and pure air."

They may be employed in cellars, yards, privies, vaults, sinks, water-closets, sick rooms, bed-pans, stables, and in other places about your premises, or wherever practicable, when there are offensive odors emitted.

DISINFECTANTS AND HOW TO USE THEM.

Quick-lime.—This may be employed as a purifier, to act as a dryer in damp apartments, and upon moist and hurtful effluvia. It may be strewn as dry lime on the earth, or placed upon plates, or, better still, in the shape of whitewash upon the walls. In the latter form, the addition of a small quantity of carbolic acid adds to its efficiency.

Charcoal is a powerful oxidizing agent. It may be used as a deodorant and purifier. "The sole condition necessary is the free access of atmospheric air, which the charcoal uses in oxidizing the putrid miasms." It should be freely strewn on the floors of cellars, and all places which may be damp and mouldy. It should always be used in a crushed and fresh state.

An excellent deodorizing compound may be made by mixing *one part of peat charcoal, one part of quicklime, and four parts of sand or gravel.*

Sulphate of Iron (*Green Copperas*), *Sulphate of Zinc and Sulphate of Copper.*—Dissolve one or two pounds of any of these salts in a gallon of water and use the solution to correct decomposing and offensive matters. *Sulphate of iron* is the cheapest of these substances. Eight or ten pounds of it dissolved in five or six gallons of warm water, with one pint of crude carbolic acid added, makes *the cheapest and one of the best disinfecting fluids for common use* in privies, water-closets, drains and sewers.

Before the emptying of privies or cess-pools the contents should be disinfected. For effective disinfection a solution of two pounds of *sulphate of iron* (*copperas*) in a gallon of water, or of one pint of liquid *chloride of zinc* in a gallon of water (to each of which two ounces of strong carbolic acid has been added) should be used in the proportion of one pint to each cubic foot of contents. After thorough disinfection a quantity of either of these solutions should be poured down daily to keep the cess-pits in good condition. *Chloride of lime* in the proportion of one pound to a gallon of water may also be used.

DISINFECTION PROPER.

Fire.—The burning of infectious material, infected clothing, etc., is an effectual way of disposing of it. Articles of little value which have been soiled with infectious material (especially old clothing and bedding) had better be burned.

Heat.—Boiling for half an hour will destroy all known disease germs. This is the cheapest and best way of disinfecting clothing, and articles which are not injured by the ordinary operations of the laundry. *Moist heat* (steam) at 230° Fahr. destroys germs of all kinds, even the most resistant spores, in twenty minutes.

Sulphur Fumigation is an excellent method of purification. Place the sulphur in an iron dish, supported upon bricks in a wash-tub containing a little water; set it on fire by hot coals or with the aid of a spoonful of alcohol. All doors, windows and all other openings should be closed, and allowed to remain so at least twelve hours; the room should then be opened and well ventilated. Two pounds of sulphur will be required for a room ten feet square (1,000 cubic feet of space). The amount should be increased for larger rooms in the same proportion.

Chloride of Lime.—This is one of the cheapest and most efficient of disinfectants. For the purpose of correcting

offensive matters, and for utensils, sinks, water-closets, drains, bed-pans, etc., it may be mixed with water in the proportion of one pound to one gallon. Infected bed and body linen, towels, etc., which cannot be immediately boiled, may be disinfected by immersion in a solution of chloride of lime in the proportion of two ounces to the gallon of water, and left for four hours.

Corrosive Sublimate.—This is a powerful disinfectant, but on account of its *highly poisonous* quality should be used with the greatest care. Dissolve in water in the proportion of two drachms to the gallon, and add one drachm of permanganate of potash to give color to the solution. Label it carefully—POISON. Use one pint of this solution for the disinfection of each discharge in cholera, typhoid fever, etc., or for vomited matters. Leave in vessel ten or fifteen minutes before throwing into cess-pool or water-closet. It will injure lead pipes if used constantly; it should not be placed in metal receptacles.

Carbolic Acid.—Very useful for disinfecting soiled clothing, discharges from the bowels, vomited matters, etc., and for the general purposes of disinfection. A wineglassful (two ounces) of the pure liquid well mixed with a quart of warm water, for use in night vessels, water-closets, sinks, or for wetting a sheet to hang in the doorway of a sick chamber. Half a wineglassful to one quart of warm water, for washing furniture, walls, etc. Two ounces to the gallon of water, for clothing, etc. One pint of strong carbolic acid added to five gallons of warm water should be occasionally poured into sinks and drains leading into sewers. One ounce of the crystals mixed with four pounds of slaked lime forms a good powder for covering over offensive heaps of filth or refuse that it is impossible or unwise to remove. Liquid acid diluted with two thousand times its bulk, for street sprinkling. ***Carbolic acid soap*, for the hands.**

CAREFULLY NOTE, that "it appears to be characteristic of *cholera*, not only of the disease in its developed and alarming form, but equally of the slightest diarrhœa which the epidemic can produce, that *all matters which the patient discharges from his stomach and bowels are infective;* that the patient's power of infecting other persons is represented almost or quite exclusively by those discharges; * *

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* * * and that if *they be cast away without previous disinfection*, they impart their own infective quality to the excremental matters with which they mingle in filth-sodden earth, or in depositories and conduits of filth, and to the effluvia which those excremental matters evolve; that if the infective material, by leakage or soakage from drains or cess-pools, or otherwise, gets access even in the smallest quantity, directly, or through porous soil, *to wells* or other sources of *drinking water*, it can infect, in the most dangerous manner, very large volumes of water; that the infective influence of the choleraic discharges attaches to whatever bedding, clothing, and like things that have been imbued with them, and renders these things, if not disinfected, capable of spreading the disease."—*Chief Medical Officer of Great Britain.*

PERSONAL DUTIES.

Observe strict cleanliness in your person and clothing. Bathe daily, if you have the convenience. If not, wash freely with cold water every day.

Change your undergarments daily, or as frequently as your circumstances will admit.

Be moral, regular in your habits of life, meals, exercise, and sleep.

Be careful to dress comfortably for the season, avoid the night air as much as possible, and when thus exposed put on an extra garment, and do not go into the night air when in a a state of perspiration.

Be careful to avoid the use of alcoholic drinks. Do not suppose that their use will prevent the occurrence of disease. On the other hand, those who indulge in the custom are always fair subjects for disease, and when attacked the intemperate are particularly in a condition to offer feeble resistance.

Live temperately, live regularly, avoid all excesses in eating crude, raw and indigestible food, especially cabbage, salad, cucumbers and unripe fruits.

The boiling of milk and all water used for drinking purposes is a necessity.

Partake of well-cooked beef and mutton, rice well boiled, and avoid pastry and laxative fruit.

Take your meals at regular seasons, neither abstaining too long at a time, nor indulging too frequently. An overloaded stomach is as much to be dreaded as an empty one.

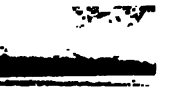
Avoid bodily fatigue and mental exhaustion. Lead a calm and quiet life. Let all exciting causes be avoided. If you depress or impair the vital forces, it is prejudicial to health. By excitement or violent exercise, you increase the susceptibility of the system to disease.

During the prevalence of cholera, do not neglect even the slightest diarrhœa, no matter how painless at first.

By order of the Board of Health,

WILLIAM H. FORD, M. D.,
President.

A. A. HIRST,
Secretary.



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